

IN THE CLAIMS

Please amend the claims as follows:

1. (Original) A system, comprising:

means for sampling a normal sinus rhythm (NSR) QRS-complex from a NSR cardiac cycle;

means for locating a plurality of feature points on the NSR QRS-complex based on morphological features of the NSR QRS-complex;

means for determining a NSR template for a plurality of the NSR cardiac cycles, wherein the NSR template includes a median value for each of the plurality of feature points;

means for producing a NSR filter output from a numerical convolution of the NSR template and the plurality of feature points for each of the plurality of the NSR cardiac cycles;

means for determining a median NSR filter output template for the plurality of the NSR cardiac cycles, wherein the median NSR filter output template has a median value for each value in the NSR filter output;

means for detecting a tachycardia event;

means for sampling a QRS-complex from a tachycardia complex during the tachycardia event;

means for locating the plurality of feature points on the QRS-complex from the tachycardia complex based on morphological features of the QRS-complex;

means for producing a tachycardia complex output from a numerical convolution of the NSR template with the plurality of feature points on the QRS-complex from the tachycardia complex;

means for summing a numerical difference between the values of the tachycardia complex output and the median NSR filter output template; and

means for classifying the tachycardia complex as a ventricular tachycardia complex when the sum of the difference between the values of the tachycardia complex output and the median NSR filter output template is greater than or equal to a predetermined sum of residual threshold value.

2. (Original) The system of claim 1, wherein the means for classifying the tachycardia complex comprises:

means for determining an absolute value of the difference between the values of the tachycardia complex output and the median NSR filter output template; and

means for classifying the cardiac complex as a supraventricular tachycardia complex when the absolute value of the difference between the values of the tachycardia complex output and the median NSR filter output template is less than the predetermined sum of residual threshold value.

3. (Original) The system of claim 2, further comprising:

means for sampling a plurality of tachycardia complexes and classifying each of the plurality of tachycardia complexes as either a ventricular tachycardia complex or a supraventricular tachycardia complex; and

means for determining whether a number of classified ventricular tachycardia complexes exceeds a predetermined threshold value.

4. (Original) The system of claim 3, further comprising means for declaring a ventricular tachycardia event when the number of ventricular tachycardia complexes exceeded the predetermined threshold value.

5. (Original) The system of claim 4, further comprising means for delivering a ventricular tachycardia therapy to a heart when the ventricular tachycardia event is declared.

6. (Original) The system of claim 3, further comprising means for declaring a supraventricular tachycardia event when the number of supraventricular tachycardia complexes exceeded the predetermined threshold value.

7. (Original) The system of claim 6, further comprising means for delivering a supraventricular tachycardia therapy to a heart when the supraventricular tachycardia event is declared.

8-22. (Canceled).

23. (New) A system, comprising:

means for sampling a normal sinus rhythm (NSR) QRS-complex from a NSR cardiac cycle;

means for locating a plurality of feature points on the NSR QRS-complex based on morphological features of the NSR QRS-complex;

means for determining a NSR template for a plurality of the NSR cardiac cycles, wherein the NSR template includes a median value for each of the plurality of feature points;

means for producing a NSR filter output from a numerical convolution of the NSR template and the plurality of feature points for each of the plurality of the NSR cardiac cycles;

means for determining a median NSR filter output template for the plurality of the NSR cardiac cycles, wherein the median NSR filter output template has a median value for each value in the NSR filter output;

means for detecting a tachycardia event;

means for sampling a QRS-complex from a tachycardia complex during the tachycardia event;

means for locating the plurality of feature points on the QRS-complex from the tachycardia complex based on morphological features of the QRS-complex;

means for producing a tachycardia complex output from a numerical convolution of the NSR template with the plurality of feature points on the QRS-complex from the tachycardia complex;

means for summing a numerical difference between the values of the tachycardia complex output and the median NSR filter output template;

means for classifying the tachycardia complex as a ventricular tachycardia complex when the sum of the difference between the values of the tachycardia complex output and the median NSR filter output template is greater than or equal to a predetermined sum of residual threshold value; and

means for classifying the cardiac complex as a supraventricular tachycardia complex when an absolute value of the difference between the values of the tachycardia complex output

and the median NSR filter output template is less than the predetermined sum of residual threshold value.

24. (New) The system of claim 23, further comprising:

means for declaring a ventricular tachycardia event when a number of ventricular tachycardia complexes exceeded a predetermined threshold value.

25. (New) The system of claim 24, further comprising:

means for delivering a ventricular tachycardia therapy to a heart when the ventricular tachycardia event is declared.

26. (New) The system of claim 23, further comprising:

means for declaring a supraventricular tachycardia event when a number of supraventricular tachycardia complexes exceeded a predetermined threshold value.

27. (New) The system of claim 26, further comprising:

means for delivering a supraventricular tachycardia therapy to a heart when the supraventricular tachycardia event is declared.

28. (New) The system of claim 25, wherein the means for delivering a ventricular tachycardia therapy includes an implantable pacemaker.

29. (New) A system, comprising:

means for sampling a normal sinus rhythm (NSR) QRS-complex from a NSR cardiac cycle;

means for locating a plurality of feature points on the NSR QRS-complex based on morphological features of the NSR QRS-complex;

means for determining a NSR template for a plurality of the NSR cardiac cycles, wherein the NSR template includes a median value for each of the plurality of feature points;

means for producing a NSR filter output from a numerical convolution of the NSR template and the plurality of feature points for each of the plurality of the NSR cardiac cycles;

means for determining a median NSR filter output template for the plurality of the NSR cardiac cycles, wherein the median NSR filter output template has a median value for each value in the NSR filter output;

means for detecting a tachycardia event;

means for sampling a QRS-complex from a tachycardia complex during the tachycardia event;

means for locating the plurality of feature points on the QRS-complex from the tachycardia complex based on morphological features of the QRS-complex;

means for producing a tachycardia complex output from a numerical convolution of the NSR template with the plurality of feature points on the QRS-complex from the tachycardia complex;

means for summing a numerical difference between the values of the tachycardia complex output and the median NSR filter output template;

means for classifying the tachycardia complex as a ventricular tachycardia complex when the sum of the difference between the values of the tachycardia complex output and the median NSR filter output template is greater than or equal to a predetermined sum of residual threshold value; and

means for sampling a plurality of tachycardia complexes and classifying each of the plurality of tachycardia complexes as either a ventricular tachycardia complex or a supraventricular tachycardia complex.

30. (New) The system of claim 29, wherein the means for summing a numerical difference includes a microprocessor.

31. (New) The system of claim 30, further comprising an output circuit coupled to the microprocessor, wherein the output circuit is adapted to deliver cardioversion and defibrillation therapy.

32. (New) The system of claim 29, wherein the means for detecting a tachycardia event includes an input circuit.

33. (New) The system of claim 29, wherein the means for locating the plurality of feature points includes a morphology analyzing circuit.

34. (New) The system of claim 29, wherein the means for producing a tachycardia complex output includes a filter output response circuit.

35. (New) The system of claim 29, wherein the means for classifying the tachycardia complex includes a microprocessor.